



# TCEQ

Investigation No. 880263  
Fiscal Year 2012  
DFW Regional Office

## ATTACHMENT 7

### **Alleged Violations and Additional Issues Response Letter**

**SWR No. 30516  
IHW Permit No. 50206  
EPA ID No. TXD006451090  
RN100218643  
CN600129787**

**Exide Technologies-Frisco**

INVESTIGATOR: DOROTHY LEWIS  
INVESTIGATION DATES: 06/28/2011-06/29/2011

**From:** "HARDY, Edward (Baton Rouge)" <[REDACTED]>  
**To:** Dorothy.Lewis@tceq.texas.gov  
**Date:** 7/27/2011 2:46 PM  
**Subject:** Exide Frisco - Records Request Submittal Via Email  
**Attachments:** Attachment 1.pdf; Attachment 2.pdf; Attachment 3.pdf; Add Records Request Letter to TCEQ 7\_27\_11.pdf

Dorothy,

Attached are the documents we discussed this morning. The hard copy submittal and accompanying CD will be sent today FEDEX.

Regards,

Edward M. Hardy II

Environmental Manager

Exide Technologies - BRRC/ FRC

Baton Rouge Office:

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Baton Rouge, LA 70874

2400 Brooklawn Drive

Baton Rouge, LA 70807

Office (225) 775-3040 ext. [REDACTED]

[REDACTED]

Frisco Office:  
7471 South 5th St.  
PO Box 250  
Frisco, TX 75034  
(972) 335-2121 [REDACTED]

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**Via Electronic Mail and FEDEX**

July 27, 2011

Ms. Dorothy Lewis (MC-R04)  
Texas Commission on Environmental Quality  
Region 4  
2309 Gravel Drive  
Fort Worth, TX 76118-6951

Re: Exide Technologies  
Frisco Battery Recycling Plant  
RN100218643  
(1) *Waste Inspection Records Request* and (2) *Additional Information in Response to Alleged Violations*

Dear Ms. Lewis:

Thank you for the brief extension of time to provide requested records. As requested, we are providing the following electronic records and additional information in response to your requests, which are listed as headings below:

**(1) Waste Inspection Records**

**Satellite Accumulation Areas**

- No additional records have been located.

**Training Records**

- No additional records have been located.

**Slag-Treatment Analytical**

- The attached CD contains a folder titled "4. *Sample Results*," which contains sample results for slag tested both prior to and after treatment.

**Slag Tested Hazardous Class 1 or LDR, last 3 years**

- See enclosed electronic records

**(2) Additional Information in Response to Alleged Violations**

Additionally, thank you for providing us with the TCEQ Exit Interview Form identifying potential violations arising from your inspection of waste operations at Exide's Frisco Battery Recycling Center. I have reviewed the listed items and would like to provide additional

information on several of the issues you identified as alleged violations. We are continuing to look into the other potential issues you identified. Some of the issues identified in the Exit Interview are addressed separately below.

- **Issue No. 2. Hazardous Waste Determination and Classification on PPE, washdown water, and shrink wrap per SW-846**

The original profile and recent characterization of shrink wrap and other packaging demonstrate this waste stream is not and was not in the past a hazardous waste. Although the waste stream is not hazardous, Exide, to be cautious, decided to treat the stream prior to shipment for off-site disposal by stabilization due to the material's exposure to process area dust. The waste stream is non-hazardous both prior to and following this treatment process. Exide recently commissioned an analysis of the material that supports the non-hazardous determination. **Attachment 1** is a copy of a report prepared by W&M Environmental Group, Inc. analyzing the shrink wrap and other packaging at the Exide Frisco facility. As the report demonstrates, the waste is not a hazardous waste or a Class I industrial waste, and the waste did not exhibit the characteristics of hazardous waste at the time of the EPA inspection. Thus, Exide is not in violation of any requirement for it to conduct a hazardous waste determination and classification on shrink wrap.

Similarly, Exide is not in violation of any requirement for it to conduct a hazardous waste determination and classification on washdown water, which Exide occasionally generates inside the slag treatment building. The Frisco facility has made extensive efforts to be a high water conservation facility to reduce the use of fresh water from the city utilities. The majority of the washdown water is recycled by being used as makeup water in the slag stabilization process and is never a solid waste, but rather used as an ingredient in the Exide process. Any washdown water not used in the process is routed to the on-site wastewater treatment process and used as process water. Thus, there is no requirement that Exide conduct a hazardous waste determination and classification on the washdown water. Even if the washdown water were a waste subject to RCRA requirements, it would not be a hazardous waste. A single sample of the washdown water was collected on June 30<sup>th</sup> at the request of TCEQ and the results passed TCLP, see **Attachment 2**.

We are looking further into the potential issues you raised concerning the characterization of PPE wastes generated at the Exide Frisco facility. Reviewing the alleged violations on the TCEQ Exit Interview Form, our understanding is that the alleged violation relates to failure to follow EPA SW 846 for the characterization of PPE using analytical results. The company did not use analytical data to make determination that PPE was non-hazardous or hazardous. Rather the company used process knowledge to make the determination that PPE was hazardous. Therefore, an alleged violation for failure to follow EPA SW 846 is inappropriate.

These alleged violations for shrink wrap, washdown water, and PPE should be dropped.

- **Issue No. 6. Two Unauthorized Waste Piles (1 untreated slag and 1 permit required on South Disposal Area)**

We disagree with TCEQ's interpretation that our slag pile near the blast furnace is an unpermitted waste storage area. When slag exits our refining kettles, we must let it cool prior to dumping it as it still contains metal in liquid form and must be inspected to determine if there is any lead remaining that must be reprocessed. If so, we reprocess the slag and heels. If not, we move the slag to our slag treatment building. While the slag is cooling, waiting for inspection and/or reprocessing, it is still part of our manufacturing process. It is not a waste at that point and, thus, is not subject to permitting and storage requirements applicable to hazardous wastes. We consider the pile to be a transfer point in our process and do not consider the material in the pile to be a solid waste until the determination is made that it cannot be reprocessed. Moreover, we note that the material does not remain in the pile for any length of time. It is generally reprocessed or moved to the slag treatment building the same day it exits the slag pots, with the greatest time it would stay in the pile being 72 hours. In any event, it certainly is not "stored" greater than 90 days.

Similarly, we disagree with the allegation that we have an unpermitted storage pile in our South Disposal Area. We agree that there is evidence of slag and battery chips exposed at ground surface in the bunker associated with the old shooting range, and we will address that as part of our ongoing maintenance of the former disposal area and its cover. The bunker itself was not created from materials at the South Disposal Area; rather it was constructed by moving soils from another location on the Exide property. (The smooth contours of the land near the bunker make it evident that we did not create the bunker from materials at the South Disposal area.) The shooting range berm is not a "storage pile" and we cannot be cited as being in violation of permitting rules for storage piles. The existing contours and elevations do show signs of cap erosion due to rainwater. Inspection logs documented that this area was deemed in need of attention; therefore, Exide intends to address the exposed areas through scheduled cover maintenance plan.

These alleged violations for the 2 unauthorized waste piles should be dropped.

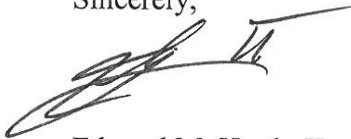
- **Issue No. 15. Disturbing the cover of a closed MSW landfill without authorization**

We understand that you were concerned that Exide's treatment staging area might be operating on the old MSW landfill. We have gone back to records (some of them found by reviewing our file at TCEQ) to determine the exact location of the old MSW landfill. Attached as **Attachment 3** are key pages from a 1991 RCRA Facility Investigation that describes the landfill delineations, the testing performed in association with that investigation, and the location of the MSW pile. Our roll-off bins are not located within the landfill perimeter and are not near the MSW portion of the landfill.

This alleged violation should be dropped.

We appreciate the opportunity to provide you with additional information about our waste operations. We are continuing to review our records and will provide you with any other information we may discover regarding the alleged violations cited in the Exit Interview Form. If you have any questions, please contact me at (972) 335-2121 ext. 26 or via email; Edward.hardy@exide.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Hardy II', with a stylized flourish extending from the end.

Edward M. Hardy II  
Interim Environmental Manager, FRC  
EXIDE TECHNOLOGIES

## Attachment 1



July 15, 2011

Mr. Edward Hardy  
Exide Technologies  
7471 South 5<sup>th</sup> Street  
Frisco, Texas 75034

RE: Summary Letter of Analysis of Cardboard/Shrink Wrap Waste Stream  
Exide Technologies Frisco, Texas Facility  
W&M Project No. 112.055

Dear Mr. Hardy:

W&M Environmental Group, Inc. (W&M) performed sampling of cardboard and shrink wrap generated during receipt of incoming lead-acid batteries for recycling. Exide Technologies Frisco (Exide) requested W&M's assistance in sampling this waste stream for purposes of determining if it meets the Environmental Protection Agency's (EPA) definition of hazardous waste contained in its regulations for the identification and listing of hazardous wastes.

#### WASTE GENERATION PROCESS

Exide receives lead-acid batteries into its facility for recycling. Batteries are typically received on pallets, with several layers of batteries on one pallet, each layer is separated by a sheet of cardboard and wrapped with plastic shrink wrap (plastic) (see Photos 1 and 2). Throughout the work shift, the batteries are moved from the pallets to the appropriate operational area for recycling. As the batteries are removed, the cardboard and plastic is removed and placed into a baler (Photo 3). After being baled, the material is disposed. Approximately 25 to 35 pallets are typically processed per hour and there are 1 to 2 bales generated from this material per day.

#### SAMPLING PLAN

According to EPA's publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, Chapter 9 entitled *Sampling Plan*, (SW-846) waste identification and listing of hazardous wastes requires that samples collected of solid wastes for analytical testing be "representative" and should exhibit average properties of the whole waste. In addition, enough samples (but in no case less than four samples) should be collected over a period of time sufficient to represent the variability of the wastes. The appropriate number of samples is the least number of samples required to generate a sufficiently precise estimate of the true mean ( $\mu$ ) concentration of a chemical contaminant of a waste. Or, the minimal number of samples needed to demonstrate that the upper limit of the confidence interval (CI) for  $\mu$  is less than the applicable regulatory threshold (RT). If little or no information is available concerning the distribution of chemical contaminants of a waste, simple random sampling is the most appropriate sampling strategy.

In order to meet the criteria specified above, W&M conducted a Site visit to interview applicable personnel about the generation of the waste stream, including process and generation rate, and concluded that the minimum number of samples that is required by EPA to exclude wastes from being listed as hazardous wastes, that number being at least four, would generate a sufficiently precise estimate of the

[www.wm-m.com](http://www.wm-m.com)

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true mean. Furthermore, W&M determined that systematic sampling over a period of three to four hours would enable a total of at least four samples be collected from a set of pallets representative of those received from a variety of sources (i.e., received from multiple trucks and/or multiple locations), therefore sufficiently representing the variability of the wastes.

#### SAMPLING EVENT

W&M collected samples at the point of generation, as the pallets were processed, and prior to being placed into the baler. Samples were collected from a total of 5 pallets during the day shift over a period of about three hours. During the period of collection, approximately 40 to 50 pallets were processed. It should be noted that the processing time per pallet was slower than normal due to the sampling that was taking place.

W&M collected samples from approximately every 10<sup>th</sup> pallet. Strips of cardboard were collected from each layer within the pallet and strips of plastic were collected from various areas that had been in contact with the batteries. The ratio of cardboard to plastic collected was approximately 80/20, representative of the quantity present on each pallet (i.e., each pallet contained approximately 80% cardboard and 20% plastic, by volume). Each sample collected was representative of one pallet (see **Photos 4 and 5**).

#### SAMPLING RESULTS

The five waste samples were each analyzed for metals, including antimony, arsenic, barium, cadmium, chromium, lead, nickel, selenium, and silver in accordance with EPA Method 6020 and for mercury in accordance with EPA Method 7470A. Prior to analysis, each sample was prepared in accordance with the toxic characteristic leaching procedure (TCLP) - EPA method 1311. The sampling results are presented in **Table 1** and the complete laboratory analytical package is presented in **Appendix B**.

Barium was detected in each of the five samples in concentrations ranging from 0.219 to 0.302 milligrams per liter (mg/l). Lead was detected in four of the five samples, in concentrations ranging from 0.059 to 0.249 mg/l. Chromium was detected in one of the five samples at a concentration of 0.151 mg/l and nickel was detected in one of the five samples at a concentration of 0.258 mg/l. Antimony, arsenic, cadmium, selenium, silver and mercury were not detected in the samples above the laboratory's sample quantitation limit (SQL).

W&M used the equations and methodology contained in Table 9-1 of SW-846 to evaluate the data (**Appendix C**). The mean values of the sampling results were calculated and were not found to exceed applicable RTs. Furthermore, the mean values calculated are greater than the variance and therefore the raw data are not characterized by obvious abnormality. Calculations are shown in **Table 2**.

The confidence levels and associated upper limits were calculated and compared to the RTs, of which, none were exceeded. Therefore, the chemical contaminants are not considered to be present in the waste at a concentration exceeding the hazardous waste RT. Additionally, the chemical contaminants are not considered to be present in the waste at a concentration exceeding the TCEQ Class I non-hazardous waste RT.

W&M reviewed analytical data from samples of the cardboard and plastic waste stream collected by Exide in February 2010, which is presented in **Table 3**. Using the same equations and methodology to evaluate this data, the mean values of the sampling results were calculated and not found to exceed applicable RTs. The mean value for Sample SWCB020110-05 is much less than the variance which indicates some data abnormality. Calculations are shown in **Table 4**. W&M did not combine data collected in 2010 by Exide with its data due to the uncertainty in sample strategy and collection

Mr. Edward Hardy  
July 15, 2011  
Page 3

methodology. Furthermore, it is the understanding of W&M that the 2010 samples were collected after the material had been baled and stored for some period of time as opposed to the point of generation.

#### SUMMARY AND CONCLUSIONS

Based on the analytical results and subsequent review of the data for samples collected by W&M on June 29, 2011, it is the opinion of W&M that the chemical contaminants analyzed are not considered to be present in the waste in hazardous or Class I non-hazardous concentrations. Furthermore, after review of historical data provided to W&M by Exide, it is the opinion of W&M that the raw data for samples collected on February 2, 2010 exhibited some abnormality and did not necessarily indicate the waste stream contained chemical contaminants in hazardous concentrations.

W&M appreciates the opportunity to be of service to you on this project. If you have any questions or need additional information, please feel free to contact us.

Very truly yours,

W&M ENVIRONMENTAL GROUP, INC.



Lori Siegelman, CHMM  
Senior Consultant

## TABLES

**TABLE 1**  
**CARDBOARD/PLASTIC WASTE ANALYTICAL RESULTS**

*Exide Technologies*  
*7471 South 5th Street*  
*Frisco, Texas*

Metals Analytical Results <sup>1</sup> (mg/l)							
Constituent	RCRA Regulatory Threshold for Hazardous Waste	TCEQ Regulatory Threshold for Class 1 Non-hazardous Waste	Pallet-01	Pallet-02	Pallet-03	Pallet-04	Pallet-05
Antimony	N/A	1.0	<0.050	<0.050	<0.050	<0.050	<0.050
Arsenic	5.0	1.8	<0.050	<0.050	<0.050	<0.050	<0.050
Barium	100	100	0.219	0.266	0.220	0.225	0.302
Cadmium	1.0	0.5	<0.010	<0.010	<0.010	<0.010	<0.010
Chromium	5.0	5.0	0.151	<0.050	<0.050	<0.050	<0.050
Lead	5.0	1.5	0.203	<0.050	0.103	0.249	0.059
Nickel	N/A	70	0.258	<0.050	<0.050	<0.050	<0.050
Selenium	1.0	1.0	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	5.0	5.0	<0.010	<0.010	<0.010	<0.010	<0.010
Mercury	0.2	0.2	<0.001	<0.001	<0.001	<0.001	<0.001

**Notes:**

Samples collected by W&M on 6/29/11 and analyzed by Oxidor Laboratories, LLC

<sup>1</sup>EPA Method 6020

<sup>2</sup>Mercury, EPA Method 7470A

<### Indicates concentrations less than the laboratory SQL.

N/A - Not Applicable

**TABLE 2**  
**CALCULATIONS OF MEAN AND STATISTICAL VARIABILITY**

*Exide Technologies*  
*7471 South 5th Street*  
*Frisco, Texas*

Constituent	Pallet-01	Pallet-02	Pallet-03	Pallet-04	Pallet-05	Mean (equation 2b)	Variance (equation 3a)	Standard Deviation (equation 4)	Standard Error (equation 5)	Confidence Interval (equation 6)	Upper Limit
Antimony	0.05	0.05	0.05	0.05	0.05	0.050	0.000	0.000	0.000	0.000	0.050
Arsenic	0.05	0.05	0.05	0.05	0.05	0.050	0.000	0.000	0.000	0.000	0.050
Barium	0.219	0.266	0.220	0.225	0.302	0.246	0.001	0.037	0.016	0.025	0.272
Cadmium	0.01	0.01	0.01	0.01	0.01	0.010	0.000	0.000	0.000	0.000	0.010
Chromium	0.151	0.05	0.05	0.05	0.05	0.070	0.002	0.045	0.020	0.031	0.101
Lead	0.203	0.050	0.103	0.249	0.059	0.133	0.008	0.089	0.040	0.061	0.194
Nickel	0.258	0.05	0.05	0.05	0.05	0.092	0.009	0.093	0.042	0.064	0.155
Selenium	0.05	0.05	0.05	0.05	0.05	0.050	0.000	0.000	0.000	0.000	0.050
Silver	0.01	0.01	0.01	0.01	0.01	0.010	0.000	0.000	0.000	0.000	0.010
Mercury	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001

**TABLE 3  
CARDBOARD/PLASTIC WASTE ANALYTICAL RESULTS**

*Exide Technologies  
7471 South 5th Street  
Frisco, Texas*

Metals Analytical Results <sup>1</sup> (mg/l)							
Constituent	RCRA TCLP Extract Concentration Limit	TCEQ Regulatory Threshold for Class 1 Non-hazardous Waste	SWCB020110-02	SWCB020110-03	SWCB020110-04	SWCB020110-05	SWCB020110-06
Antimony	1.0	1.0	0.060	0.073	<0.05	<0.050	<0.050
Arsenic	5.0	1.8	0.092	0.050	<0.050	<0.050	<0.050
Barium	100	100	0.111	0.058	0.204	0.317	0.183
Cadmium	1.0	0.5	0.044	<0.01	<0.01	0.015	<0.01
Chromium	5.0	5.0	<0.050	<0.050	<0.050	<0.050	<0.050
Lead	5.0	1.5	0.050	0.050	1.370	5.720	0.082
Nickel	70	70	0.114	0.079	<0.050	0.068	<0.050
Selenium	1.0	1.0	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	5.0	5.0	<0.010	<0.010	<0.010	<0.010	<0.010
Mercury	0.2	0.2	<0.001	<0.001	<0.001	<0.001	<0.001

**Notes:**

Samples collected by Exide on 2/21/10 and analyzed by Oxidor Laboratories, LLC

<sup>1</sup>EPA Method 6020

<sup>2</sup>Mercury, EPA Method 7470A

<### Indicates concentrations less than the laboratory SQL.

**TABLE 4**  
**CALCULATIONS OF MEAN AND STATISTICAL VARIABILITY**

*Exide Technologies*  
*7471 South 5th Street*  
*Frisco, Texas*

Constituent	SWCB02 0110-01	SWCB02 0110-02	SWCB02 0110-03	SWCB02 0110-04	SWCB02 0110-05	SWCB02 0110-06	Mean (equation 2b)	Variance (equation 3a)	Standard Deviation (equation 4)	Standard Error (equation 5)	Confidence Interval (equation 6)	Upper Limit
Antimony	0.05	0.06	0.073	0.05	0.05	0.05	0.057	0.000	0.009	0.004	0.008	0.063
Arsenic	0.05	0.092	0.05	0.05	0.05	0.05	0.058	0.000	0.017	0.008	0.012	0.070
Barium	0.329	0.111	0.058	0.204	0.317	0.183	0.204	0.012	0.108	0.048	0.074	0.278
Cadmium	0.01	0.044	0.01	0.01	0.015	0.01	0.018	0.000	0.014	0.006	0.009	0.027
Chromium	0.05	0.05	0.05	0.05	0.05	0.05	0.050	0.000	0.000	0.000	0.000	0.050
Lead	2.95	0.05	0.05	1.37	5.72	0.082	2.028	5.179	2.276	1.018	1.560	3.588
Nickel	0.05	0.114	0.079	0.05	0.068	0.05	0.072	0.001	0.025	0.011	0.017	0.090
Selenium	0.05	0.05	0.05	0.05	0.05	0.05	0.050	0.000	0.000	0.000	0.000	0.050
Silver	0.01	0.01	0.01	0.01	0.01	0.01	0.010	0.000	0.000	0.000	0.000	0.010
Mercury	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.001

**PHOTO LOG**

**APPENDIX A**



**Photo 1: Pallets of batteries as received by Exide, prior to processing.**



**Photo 2: Close up view of a pallet containing batteries as received by Exide, prior to processing.**



**Appendix A**  
**Photographic Log**  
 7471 East 5th Street  
 Frisco, Texas



**Photo 3: View of baler with plastic and cardboard.**



**Photo 4: View of cardboard and plastic removed from a single pallet.**



**Appendix A**  
**Photographic Log**  
 7471 East 5th Street  
 Frisco, Texas

07-14-11

Waste Analysis and Characterization

W&M Project No.: 112.065



**Photo 5: View of fifth sample collected.**

**LABORATORY  
ANALYTICAL DATA**

**APPENDIX B**



OXIDOR Laboratories, LLC



Order ID: 11060658

Date: 7/8/2011

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Friday, July 08, 2011

W&M Environmental Group, Inc.

Lori Siegelman

906 E. 18th, Suite 100

Plano, TX 75074

Tel: (972) 516-0300 Fax: (972) 516-4145

Re: Project Name: Exide Characterization

Project Number: 112.055

Project Location: Frisco, TX

Oxidior received 5 solid sample(s). The analysis performed were as follows:

<u>Sample</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Analysis</u>
11060658-001	Pallet-01	Solid	6/29/2011 10:20	TCLP Antimony, TCLP Arsenic, TCLP Barium, TCLP Cadmium, TCLP Chromium, TCLP Lead, TCLP Mercury, TCLP Metals Extraction, TCLP Nickel, TCLP Selenium, TCLP Silver
11060658-002	Pallet-02	Solid	6/29/2011 11:04	TCLP Antimony, TCLP Arsenic, TCLP Barium, TCLP Cadmium, TCLP Chromium, TCLP Lead, TCLP Mercury, TCLP Metals Extraction, TCLP Nickel, TCLP Selenium, TCLP Silver
11060658-003	Pallet-03	Solid	6/29/2011 11:38	TCLP Antimony, TCLP Arsenic, TCLP Barium, TCLP Cadmium, TCLP Chromium, TCLP Lead, TCLP Mercury, TCLP Metals Extraction, TCLP Nickel, TCLP Selenium, TCLP Silver
11060658-004	Pallet-04	Solid	6/29/2011 12:17	TCLP Antimony, TCLP Arsenic, TCLP Barium, TCLP Cadmium, TCLP Chromium, TCLP Lead, TCLP Mercury, TCLP Metals Extraction, TCLP Nickel, TCLP Selenium, TCLP Silver
11060658-005	Pallet-05	Solid	6/29/2011 12:56	TCLP Antimony, TCLP Arsenic, TCLP Barium, TCLP Cadmium, TCLP Chromium, TCLP Lead, TCLP Mercury, TCLP Metals Extraction, TCLP Nickel, TCLP Selenium, TCLP Silver

Respectfully submitted,

Charles Brungardt

President



W&amp;M Environmental Group, Inc.

Lori Siegelman

**Analytical Report**Project Name: **Exide Characterization**Customer Sample ID: **Pallet-01**

Oxidor Sample ID: 11060658-001

Sample Received: 6/29/2011

Matrix: **Solid**

Sample Collected: 6/29/2011 10:20

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
<b>Sample Prep</b>								
<b>TCLP Metals Extraction</b>								
TCLP Extraction					06/30/11 16:00	1311	D.C.	
<b>Metals</b>								
<i>Digested by method 3005A on 07/01/11 at 10:45</i>								
TCLP Antimony	0.05	0.050	ND	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Arsenic	0.05	0.050	ND	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Barium	0.05	0.050	0.219	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Cadmium	0.01	0.010	ND	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Chromium	0.05	0.050	0.151	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Lead	0.05	0.050	0.203	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Nickel	0.05	0.050	0.258	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Selenium	0.05	0.050	ND	mg/L	07/01/11 20:33	6020	D.D.	
TCLP Silver	0.01	0.010	ND	mg/L	07/01/11 20:33	6020	D.D.	
<i>Digested by method 7470A on 07/01/11 at 10:45</i>								
TCLP Mercury	0.001	0.001	ND	mg/L	07/01/11 18:22	7470A	K.O.	



W&amp;M Environmental Group, Inc.

Lori Siegelman

**Analytical Report**Project Name: **Exide Characterization**Customer Sample ID: **Pallet-02**Oxidor Sample ID: **11060658-002**Sample Received: **6/29/2011**Matrix: **Solid**Sample Collected: **6/29/2011 11:04**

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
<b>Sample Prep</b>								
<b>TCLP Metals Extraction</b>								
TCLP Extraction					06/30/11 16:00	1311	D.C.	
<b>Metals</b>								
<i>Digested by method 3005A on 07/01/11 at 10:45</i>								
TCLP Antimony	0.05	0.050	ND	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Arsenic	0.05	0.050	ND	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Barium	0.05	0.050	0.266	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Cadmium	0.01	0.010	ND	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Chromium	0.05	0.050	ND	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Lead	0.05	0.050	ND	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Nickel	0.05	0.050	ND	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Selenium	0.05	0.050	ND	mg/L	07/01/11 21:39	6020	D.D.	
TCLP Silver	0.01	0.010	ND	mg/L	07/01/11 21:39	6020	D.D.	
<i>Digested by method 7470A on 07/01/11 at 10:45</i>								
TCLP Mercury	0.001	0.001	ND	mg/L	07/01/11 18:23	7470A	K.O.	



W&M Environmental Group, Inc.  
Lori Siegelman

## Analytical Report

Project Name: **Exide Characterization**

Customer Sample ID: **Pallet-03**

Oxidor Sample ID: **11060658-003**

Sample Received: **6/29/2011**

Matrix: **Solid**

Sample Collected: **6/29/2011 11:38**

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
<b>Sample Prep</b>								
<b>TCLP Metals Extraction</b>								
TCLP Extraction					06/30/11 16:00	1311	D.C.	
<b>Metals</b>								
<i>Digested by method 3005A on 07/01/11 at 10:45</i>								
TCLP Antimony	0.05	0.050	ND	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Arsenic	0.05	0.050	ND	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Barium	0.05	0.050	0.220	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Cadmium	0.01	0.010	ND	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Chromium	0.05	0.050	ND	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Lead	0.05	0.050	0.103	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Nickel	0.05	0.050	ND	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Selenium	0.05	0.050	ND	mg/L	07/01/11 20:45	6020	D.D.	
TCLP Silver	0.01	0.010	ND	mg/L	07/01/11 20:45	6020	D.D.	
<i>Digested by method 7470A on 07/01/11 at 10:45</i>								
TCLP Mercury	0.001	0.001	ND	mg/L	07/01/11 18:25	7470A	K.O.	



W&amp;M Environmental Group, Inc.

Lori Siegelman

**Analytical Report**Project Name: **Exide Characterization**Customer Sample ID: **Pallet-04**Oxidor Sample ID: **11060658-004**Sample Received: **6/29/2011**Matrix: **Solid**Sample Collected: **6/29/2011 12:17**

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
<b>Sample Prep</b>								
<b>TCLP Metals Extraction</b>								
TCLP Extraction					06/30/11 16:00	1311	D.C.	
<b>Metals</b>								
<i>Digested by method 3005A on 07/01/11 at 10:45</i>								
TCLP Antimony	0.05	0.050	ND	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Arsenic	0.05	0.050	ND	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Barium	0.05	0.050	0.225	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Cadmium	0.01	0.010	ND	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Chromium	0.05	0.050	ND	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Lead	0.05	0.050	0.249	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Nickel	0.05	0.050	ND	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Selenium	0.05	0.050	ND	mg/L	07/01/11 20:51	6020	D.D.	
TCLP Silver	0.01	0.010	ND	mg/L	07/01/11 20:51	6020	D.D.	
<i>Digested by method 7470A on 07/01/11 at 10:45</i>								
TCLP Mercury	0.001	0.001	ND	mg/L	07/01/11 18:26	7470A	K.O.	



W&amp;M Environmental Group, Inc.

Lori Siegelman

**Analytical Report**Project Name: **Exide Characterization**Customer Sample ID: **Pallet-05**Oxidore Sample ID: **11060658-005**Sample Received: **6/29/2011**Matrix: **Solid**Sample Collected: **6/29/2011 12:56**

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
<b>Sample Prep</b>								
<b>TCLP Metals Extraction</b>								
TCLP Extraction					06/30/11 16:00	1311	D.C.	
<b>Metals</b>								
<i>Digested by method 3005A on 07/01/11 at 10:45</i>								
TCLP Antimony	0.05	0.050	ND	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Arsenic	0.05	0.050	ND	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Barium	0.05	0.050	0.302	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Cadmium	0.01	0.010	ND	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Chromium	0.05	0.050	ND	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Lead	0.05	0.050	0.059	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Nickel	0.05	0.050	ND	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Selenium	0.05	0.050	ND	mg/L	07/01/11 20:57	6020	D.D.	
TCLP Silver	0.01	0.010	ND	mg/L	07/01/11 20:57	6020	D.D.	
<i>Digested by method 7470A on 07/01/11 at 10:45</i>								
TCLP Mercury	0.001	0.001	ND	mg/L	07/01/11 18:27	7470A	K.O.	



W&M Environmental Group, Inc.  
Lori Siegelman

## Sample Cross Reference

Project Name: **Exide Characterization**

Customer ID:	Lab ID:	Test	Method	QCBatchID:
Pallet-01	11060658-001	TCLP Mercury	7470A	MERC_03720_L
		TCLP Arsenic	6020	META_14136_L
		TCLP Barium	6020	META_14136_L
		TCLP Cadmium	6020	META_14136_L
		TCLP Chromium	6020	META_14136_L
		TCLP Lead	6020	META_14136_L
		TCLP Nickel	6020	META_14136_L
		TCLP Selenium	6020	META_14136_L
		TCLP Silver	6020	META_14136_L
		TCLP Antimony	6020	META_14136_L
Pallet-02	11060658-002	TCLP Mercury	7470A	MERC_03720_L
		TCLP Arsenic	6020	META_14136_L
		TCLP Silver	6020	META_14136_L
		TCLP Selenium	6020	META_14136_L
		TCLP Nickel	6020	META_14136_L
		TCLP Lead	6020	META_14136_L
		TCLP Chromium	6020	META_14136_L
		TCLP Barium	6020	META_14136_L
		TCLP Antimony	6020	META_14136_L
		TCLP Cadmium	6020	META_14136_L
Pallet-03	11060658-003	TCLP Mercury	7470A	MERC_03720_L
		TCLP Lead	6020	META_14136_L
		TCLP Antimony	6020	META_14136_L
		TCLP Arsenic	6020	META_14136_L
		TCLP Barium	6020	META_14136_L
		TCLP Nickel	6020	META_14136_L
		TCLP Selenium	6020	META_14136_L
		TCLP Silver	6020	META_14136_L
		TCLP Cadmium	6020	META_14136_L
		TCLP Chromium	6020	META_14136_L
Pallet-04	11060658-004	TCLP Mercury	7470A	MERC_03720_L
		TCLP Silver	6020	META_14136_L
		TCLP Nickel	6020	META_14136_L
		TCLP Lead	6020	META_14136_L
		TCLP Cadmium	6020	META_14136_L
		TCLP Barium	6020	META_14136_L
		TCLP Arsenic	6020	META_14136_L
		TCLP Antimony	6020	META_14136_L
		TCLP Chromium	6020	META_14136_L
		TCLP Selenium	6020	META_14136_L
Pallet-05	11060658-005	TCLP Mercury	7470A	MERC_03720_L
		TCLP Arsenic	6020	META_14136_L
		TCLP Selenium	6020	META_14136_L
		TCLP Nickel	6020	META_14136_L
		TCLP Lead	6020	META_14136_L
		TCLP Chromium	6020	META_14136_L

W&M Environmental Group, Inc.  
Lori Siegelman

## Sample Cross Reference

Project Name: **Exide Characterization**

Customer ID:	Lab ID:	Test	Method	QCBatchID:
		TCLP Barium	6020	META_14136_L
		TCLP Antimony	6020	META_14136_L
		TCLP Silver	6020	META_14136_L
		TCLP Cadmium	6020	META_14136_L



W&amp;M Environmental Group, Inc.

Lori Siegelman

## QC Summary

Project Name: Exide Characterization

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
<b>QCBatchID MERC_03720_L</b>									
Blank	TCLP Mercury	ND mg/L							
LCS	TCLP Mercury	0.005 mg/L		0.005 mg/L	94%	85-115%			
LCSD	TCLP Mercury	0.005 mg/L	85	0.005 mg/L	98%	-115%	2.0%	0-25%	
MS	TCLP Mercury	0.019 mg/L	ND	0.02 mg/L	97%	80-120%			
MSD	TCLP Mercury	0.020 mg/L	ND 80	0.02 mg/L	99%	-120%	4.1%	0-25%	
<b>QCBatchID META_14136_L</b>									
Blank	TCLP Antimony	ND mg/L							
	TCLP Arsenic	ND mg/L							
	TCLP Barium	ND mg/L							
	TCLP Cadmium	ND mg/L							
	TCLP Chromium	ND mg/L							
	TCLP Lead	ND mg/L							
	TCLP Nickel	ND mg/L							
	TCLP Selenium	ND mg/L							
	TCLP Silver	ND mg/L							
LCS	TCLP Antimony	0.103 mg/L		0.1 mg/L	103%	85-115%			
	TCLP Arsenic	0.105 mg/L		0.1 mg/L	105%	85-115%			
	TCLP Barium	0.106 mg/L		0.1 mg/L	106%	85-115%			
	TCLP Cadmium	0.107 mg/L		0.1 mg/L	107%	85-115%			
	TCLP Chromium	0.111 mg/L		0.1 mg/L	111%	85-115%			
	TCLP Lead	0.101 mg/L		0.1 mg/L	101%	85-115%			
	TCLP Nickel	0.108 mg/L		0.1 mg/L	108%	85-115%			
	TCLP Selenium	0.111 mg/L		0.1 mg/L	111%	85-115%			
	TCLP Silver	0.107 mg/L		0.1 mg/L	107%	85-115%			
LCSD	TCLP Antimony	0.102 mg/L	85	0.1 mg/L	102%	-115%	0.7%	0-20%	
	TCLP Arsenic	0.104 mg/L	85	0.1 mg/L	104%	-115%	0.8%	0-20%	
	TCLP Barium	0.105 mg/L	85	0.1 mg/L	105%	-115%	1.1%	0-20%	
	TCLP Cadmium	0.106 mg/L	85	0.1 mg/L	106%	-115%	1.1%	0-20%	
	TCLP Chromium	0.111 mg/L	85	0.1 mg/L	111%	-115%	0.1%	0-20%	
	TCLP Lead	0.100 mg/L	85	0.1 mg/L	100%	-115%	0.7%	0-20%	
	TCLP Nickel	0.107 mg/L	85	0.1 mg/L	107%	-115%	1.1%	0-20%	
	TCLP Selenium	0.111 mg/L	85	0.1 mg/L	111%	-115%	0.3%	0-20%	
	TCLP Silver	0.106 mg/L	85	0.1 mg/L	106%	-115%	1.1%	0-20%	
MS	TCLP Antimony	0.513 mg/L	ND	0.5 mg/L	103%	80-120%			
	TCLP Arsenic	0.529 mg/L	ND	0.5 mg/L	106%	80-120%			
	TCLP Barium	0.652 mg/L	0.136 mg/L	0.5 mg/L	103%	80-120%			
	TCLP Cadmium	0.519 mg/L	ND	0.5 mg/L	104%	80-120%			
	TCLP Chromium	0.541 mg/L	ND	0.5 mg/L	108%	80-120%			
	TCLP Lead	0.502 mg/L	ND	0.5 mg/L	100%	80-120%			
	TCLP Nickel	0.528 mg/L	ND	0.5 mg/L	106%	80-120%			
	TCLP Selenium	0.553 mg/L	ND	0.5 mg/L	111%	80-120%			
	TCLP Silver	0.523 mg/L	ND	0.5 mg/L	105%	80-120%			
MSD	TCLP Antimony	0.509 mg/L	ND 80	0.5 mg/L	102%	-120%	0.7%	0-20%	



W&M Environmental Group, Inc.  
Lori Siegelman

## QC Summary

Project Name: **Exide Characterization**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
<b>QCBatchID META_14136_L</b>									
	TCLP Arsenic	0.527 mg/L	ND 80	0.5 mg/L	106%	-120%	0.3%	0-20%	
	TCLP Barium	0.645 mg/L	0.136 mg/L	0.5 mg/L	102%	80-120%	1.1%	0-20%	
	TCLP Cadmium	0.500 mg/L	ND 80	0.5 mg/L	100%	-120%	3.7%	0-20%	
	TCLP Chromium	0.538 mg/L	ND 80	0.5 mg/L	108%	-120%	0.6%	0-20%	
	TCLP Lead	0.490 mg/L	ND 80	0.5 mg/L	98%	-120%	2.3%	0-20%	
	TCLP Nickel	0.522 mg/L	ND 80	0.5 mg/L	105%	-120%	1.0%	0-20%	
	TCLP Selenium	0.538 mg/L	ND 80	0.5 mg/L	108%	-120%	2.7%	0-20%	
	TCLP Silver	0.503 mg/L	ND 80	0.5 mg/L	101%	-120%	3.9%	0-20%	



W&M Environmental Group, Inc.

Lori Siegelman

## Case Narrative

Project Name: **Exide Characterization**

---

ppm	Parts per million - mg/Kg or mg/L
ppb	Parts per billion - ug/Kg or ug/L
MQL	Method quantitation limit
SDL	Sample detection limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilutions)
SQL	Sample quantitation limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilution)
ND	Analyte not detected at or above SQL
LCS/LCSD	Laboratory control spike / Laboratory control spike duplicate
MS/MSD	Matrix spike / Matrix spike duplicate
RPD	Relative percent difference
Sub	Analysis performed by subcontract laboratory
*	Refer to QC section

*Solid sample results reported on a dry weight basis for all applicable analysis, unless otherwise noted. Dry weight calculations based upon % solids obtained as outlined in EPA method 5035 section 7.5*

TCLP start extraction temperature for QC Batch ID TCLP\_09819\_S was 26.4deg C (23 ± 2deg) .

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Oxidor Laboratories, LLC certifies to the best of its knowledge that all results contained in this report are consistent with the National Environmental Laboratory Accreditation Program, except where otherwise noted.

W&M Environmental Group, Inc.  
 Lori Siegelman

## Sample Preservation Verification

Project Name: **Exide Characterization**

Receipt temp: <b>5.0 °C on Ice</b>			All applicable VOA's received free of headspace: <b>N/A</b>		
Receipt method: <b>Client</b>					
Custody seal intact: <b>Not Present</b>			All samples / labels received intact: <b>Yes</b>		
Customer Sample ID: <b>Pallet-01</b>			Collected By: <b>Nick Foreman</b>		
Oxidor Sample ID: <b>11060658-001</b>			Collector Affiliation: <b>W&amp;M Environmental Group, Inc.</b>		
Collected: <b>06/29/11 10:20</b>			Matrix: <b>Solid</b>		
<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated Preservation</u>	<u>pH</u>
Plastic Bag	1			Temp	-
Customer Sample ID: <b>Pallet-02</b>			Collected By: <b>Nick Foreman</b>		
Oxidor Sample ID: <b>11060658-002</b>			Collector Affiliation: <b>W&amp;M Environmental Group, Inc.</b>		
Collected: <b>06/29/11 11:04</b>			Matrix: <b>Solid</b>		
<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated Preservation</u>	<u>pH</u>
Plastic Bag	1			Temp	-
Customer Sample ID: <b>Pallet-03</b>			Collected By: <b>Nick Foreman</b>		
Oxidor Sample ID: <b>11060658-003</b>			Collector Affiliation: <b>W&amp;M Environmental Group, Inc.</b>		
Collected: <b>06/29/11 11:38</b>			Matrix: <b>Solid</b>		
<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated Preservation</u>	<u>pH</u>
Plastic Bag	1			Temp	-
Customer Sample ID: <b>Pallet-04</b>			Collected By: <b>Nick Foreman</b>		
Oxidor Sample ID: <b>11060658-004</b>			Collector Affiliation: <b>W&amp;M Environmental Group, Inc.</b>		
Collected: <b>06/29/11 12:17</b>			Matrix: <b>Solid</b>		
<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated Preservation</u>	<u>pH</u>
Plastic Bag	1			Temp	-
Customer Sample ID: <b>Pallet-05</b>			Collected By: <b>Nick Foreman</b>		
Oxidor Sample ID: <b>11060658-005</b>			Collector Affiliation: <b>W&amp;M Environmental Group, Inc.</b>		
Collected: <b>06/29/11 12:56</b>			Matrix: <b>Solid</b>		
<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated Preservation</u>	<u>pH</u>
Plastic Bag	1			Temp	-

Sample conditions at time of receipt at laboratory verified in part or in whole by:

L.J.



OXIDOR Laboratories, LLC



Order ID: 11060658

Date: 7/8/2011

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## Chain of Custody

PROJECT DESCRIPTION: **Exide Characterization**



OXIDOR CORPORATION  
Environmental Sciences  
1825 E. Plano Parkway, Suite 100  
Plano, TX 75074-4227  
P: (972) 424-6422 F: (972) 424-6508  
oxidor@oxidor.com



Chain of Custody Record

Page 1 of 1

<b>Sample Information</b> Company Name: <i>UTPA Environmental Group</i> Location: <i>406 E. 18th Street</i> City: <i>Plano</i> State: <i>TX</i> Zip: <i>75074</i> Contact Name: <i>Levi Engelhorn</i> Contact Title: <i>Levi Engelhorn, Chief Engineer</i> Phone: <i>972.514.9606</i> Fax: <i>972.514.9142</i>		<b>Test Information</b> Test Name: <i>Exide Characterization</i> Test Method: <i>Exide</i> Test Date: <i>7/8/2011</i> Test Time: <i>11:20:55</i> Test Location: <i>Plano, TX</i> Test Results: <i>See Lab Report</i>																																											
<b>Sample Description</b> Sample ID: <i>406 E. 18th Street</i> Sample Type: <i>Soil</i> Sample Quantity: <i>100g</i> Sample Container: <i>100g</i> Sample Storage: <i>Room Temp</i> Sample Handling: <i>See Lab Report</i>		<b>Requested Analysis</b> <table border="1"> <thead> <tr> <th>Analysis</th> <th>Requested</th> <th>Completed</th> </tr> </thead> <tbody> <tr> <td>As</td> <td>X</td> <td></td> </tr> <tr> <td>Cd</td> <td>X</td> <td></td> </tr> <tr> <td>Cr</td> <td>X</td> <td></td> </tr> <tr> <td>Pb</td> <td>X</td> <td></td> </tr> <tr> <td>Hg</td> <td>X</td> <td></td> </tr> <tr> <td>Mn</td> <td>X</td> <td></td> </tr> <tr> <td>Ni</td> <td>X</td> <td></td> </tr> <tr> <td>Sb</td> <td>X</td> <td></td> </tr> <tr> <td>Se</td> <td>X</td> <td></td> </tr> <tr> <td>Te</td> <td>X</td> <td></td> </tr> <tr> <td>V</td> <td>X</td> <td></td> </tr> <tr> <td>W</td> <td>X</td> <td></td> </tr> <tr> <td>Zn</td> <td>X</td> <td></td> </tr> </tbody> </table>		Analysis	Requested	Completed	As	X		Cd	X		Cr	X		Pb	X		Hg	X		Mn	X		Ni	X		Sb	X		Se	X		Te	X		V	X		W	X		Zn	X	
Analysis	Requested	Completed																																											
As	X																																												
Cd	X																																												
Cr	X																																												
Pb	X																																												
Hg	X																																												
Mn	X																																												
Ni	X																																												
Sb	X																																												
Se	X																																												
Te	X																																												
V	X																																												
W	X																																												
Zn	X																																												
<b>Signature</b> Signature: <i>[Signature]</i> Date: <i>7/8/2011</i>		<b>Signature</b> Signature: <i>[Signature]</i> Date: <i>7/8/2011</i>																																											

SW 846,  
CHAPTER 9, TABLE 9-1

APPENDIX C

TABLE 9-1. BASIC STATISTICAL TERMINOLOGY APPLICABLE TO SAMPLING PLANS FOR SOLID WASTES

Terminology	Symbol	Mathematical Equation	(Equation)
• Variable (e.g., barium or endrin)	x	—	
• Individual measurement of variable	$x_i$	—	
• Mean of possible measurements of variable (population mean)	$\mu$	$\mu = \frac{\sum_{i=1}^N x_i}{N}, \text{ with } N = \text{number of possible measurements}$	(1)
• Mean of measurements generated by sample (sample mean)	$\bar{x}$	<p><u>Simple random sampling and systematic random sampling</u></p> $\bar{x} = \frac{\sum_{i=1}^n x_i}{n}, \text{ with } n = \text{number of sample measurements}$ <p><u>Stratified random sampling</u></p> $\bar{x} = \sum_{k=1}^r W_k \bar{x}_k, \text{ with } \bar{x}_k = \text{stratum mean and } W_k = \text{fraction of population represented by Stratum } k \text{ (number of strata [k] range from 1 to r)}$	(2a)
• Variance of sample	$s^2$	<p><u>Simple random sampling and systematic random sampling</u></p> $s^2 = \frac{\sum_{i=1}^n x_i^2 - (\sum_{i=1}^n x_i)^2/n}{n-1}$ <p><u>Stratified random sampling</u></p> $s^2 = \sum_{k=1}^r W_k s_k^2, \text{ with } s_k^2 = \text{stratum variance and } W_k = \text{fraction of population represent by Stratum } k \text{ (number of strata [k] ranges from 1 to r)}$	(3a)

TABLE 9-1. (continued)

Terminology	Symbol	Mathematical Equation	(Equation)
• Standard deviation of sample	s	$s = \sqrt{s^2}$	(4)
• Standard error (also standard error of mean and standard deviation of mean) of sample	$s_x$	$s_x = \frac{s}{\sqrt{n}}$	(5)
• Confidence interval for $\mu^a$	CI	$CI = \bar{x} \pm t_{.20} s_x$ <p>with <math>t_{.20}</math> obtained from Table 2 for appropriate degrees of freedom</p>	(6)
• Regulatory threshold <sup>a</sup>	RT	Defined by EPA (e.g., 100 ppm for barium in elutriate of EP toxicity)	(7)
• Appropriate number of samples to collect from a solid waste (financial constraints not considered)	n	$n = \frac{t_{.20}^2 s^2}{\Delta^2}$ <p>with <math>\Delta = RT - x</math></p>	(8)
• Degrees of freedom	df	$df = n - 1$	(9)
• Square root transformation	---	$X_i + \frac{1}{2}$	(10)
• Arcsin transformation	---	<p>Arcsin p; if necessary, refer to any text on basic statistics; measurements must be converted to percentages (p)</p>	(11)

<sup>a</sup>The upper limit of the CI for  $\mu$  is compared with the applicable regulatory threshold (RT) to determine if a solid waste contains the variable (chemical contaminant) of concern at a hazardous level. The contaminant of concern is not considered to be present in the waste at a hazardous level if the upper limit of the CI is less than the applicable RT. Otherwise, the opposite conclusion is reached.

## **Attachment 2**



OXIDOR Laboratories, LLC



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Monday, July 11, 2011

Exide Technologies  
Environmental Manager

P.O. Box 250

Frisco, TX 75034

Tel: (972) 335-2121 Fax: (972) 377-2707

Re: Project Name: Slag Treatment Sump Water

Oxidor received 1 liquid sample(s). The analysis performed were as follows:

<u>Sample</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Analysis</u>
11070044-001	STS-063011	Liquid	6/30/2011	Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Lead, Mercury, Nickel, Selenium, Silver, TCLP Antimony, TCLP Arsenic, TCLP Barium, TCLP Beryllium, TCLP Cadmium, TCLP Chromium, TCLP Lead, TCLP Mercury, TCLP Metals Extraction, TCLP Nickel, TCLP Selenium, TCLP Silver, TCLP Tin, TCLP Zinc, Tin, Zinc

Respectfully submitted,

Charles Brungardt  
President



OXIDOR Laboratories, LLC



T104704227-11-5

Order ID: 11070044

Date: 7/11/2011

Revised: 7/18/2011

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Exide Technologies  
Environmental Manager

## Analytical Report

Project Name: **Slag Treatment Sump Water**

Customer Sample ID: **STS-063011**

Oxidore Sample ID: **11070044-001**

Sample Received: **7/1/2011**

Matrix: **Liquid**

Sample Collected: **6/30/2011**

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
<b>Sample Prep</b>								
<b>TCLP Metals Extraction</b>								
TCLP Extraction					07/05/11 14:30	1311	D.C.	
<b>Metals</b>								
<i>Digested by method 3005A on 07/07/11 at 10:30</i>								
Antimony	0.005	0.005	0.180	mg/L	07/07/11 19:32	6020	K.O.	
Arsenic	0.005	0.005	0.142	mg/L	07/07/11 19:32	6020	D.D.	
Barium	0.005	0.055	2.25	mg/L	07/07/11 19:38	6020	D.D.	D-1
Beryllium	0.005	0.005	ND	mg/L	07/07/11 19:32	6020	K.O.	
Cadmium	0.005	0.005	0.228	mg/L	07/07/11 19:32	6020	D.D.	
Chromium	0.005	0.005	0.068	mg/L	07/07/11 19:32	6020	D.D.	
Lead	0.005	0.500	20.9	mg/L	07/08/11 17:24	6020	K.O.	D-1
Nickel	0.005	0.005	0.314	mg/L	07/07/11 19:32	6020	K.O.	
Selenium	0.005	0.005	0.315	mg/L	07/07/11 19:32	6020	D.D.	
Silver	0.001	0.001	0.001	mg/L	07/07/11 19:32	6020	D.D.	
TCLP Antimony	0.05	0.050	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Arsenic	0.05	0.050	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Barium	0.05	0.050	0.176	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Beryllium	0.05	0.050	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Cadmium	0.01	0.010	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Chromium	0.05	0.050	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Lead	0.05	0.050	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Nickel	0.05	0.050	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Selenium	0.05	0.050	0.145	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Silver	0.01	0.010	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Tin	0.05	0.050	ND	mg/L	07/07/11 14:40	6020	D.D.	
TCLP Zinc	0.01	0.010	ND	mg/L	07/07/11 14:40	6020	D.D.	
Tin	0.01	0.109	2.07	mg/L	07/07/11 19:38	6020	K.O.	D-1
Zinc	0.005	0.055	1.84	mg/L	07/07/11 19:38	6020	K.O.	D-1
<i>Digested by method 7470A on 07/07/11 at 11:00</i>								
Mercury	0.0002	0.0002	ND	mg/L	07/07/11 17:52	7470A	K.O.	
TCLP Mercury	0.001	0.001	ND	mg/L	07/06/11 17:43	7470A	K.O.	*



OXIDOR Laboratories, LLC



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Environmental Manager

## Sample Cross Reference

Project Name: **Slag Treatment Sump Water**

Customer ID:	Lab ID:	Test	Method	QCBatchID:
STS-063011	11070044-001	TCLP Mercury	7470A	MERC_04220_L
		Mercury	7470A	MERC_04320_L
		TCLP Barium	6020	META_14736_L
		TCLP Arsenic	6020	META_14736_L
		TCLP Beryllium	6020	META_14736_L
		TCLP Cadmium	6020	META_14736_L
		TCLP Chromium	6020	META_14736_L
		TCLP Lead	6020	META_14736_L
		TCLP Selenium	6020	META_14736_L
		TCLP Silver	6020	META_14736_L
		TCLP Tin	6020	META_14736_L
		TCLP Zinc	6020	META_14736_L
		TCLP Nickel	6020	META_14736_L
		TCLP Antimony	6020	META_14736_L
		Selenium	6020	META_14936_L
		Arsenic	6020	META_14936_L
		Barium	6020	META_14936_L
		Beryllium	6020	META_14936_L
		Cadmium	6020	META_14936_L
		Chromium	6020	META_14936_L
		Lead	6020	META_14936_L
		Nickel	6020	META_14936_L
		Silver	6020	META_14936_L
		Antimony	6020	META_14936_L
		Zinc	6020	META_14936_L
		Tin	6020	META_14936_L

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## QC Summary

Project Name: **Slag Treatment Sump Water**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
<b>QCBatchID MERC_04220_L</b>									
Blank	TCLP Mercury	ND mg/L							
LCS	TCLP Mercury	0.005 mg/L		0.005 mg/L	103%	85-115%			
LCSD	TCLP Mercury	0.005 mg/L		0.005 mg/L	107%	85-115%	7.2%	0-25%	
MS	TCLP Mercury	0.008 mg/L	ND	0.02 mg/L	42%	80-120%			Q-7
MSD	TCLP Mercury	0.008 mg/L	ND	0.02 mg/L	38%	80-120%	4.3%	0-25%	Q-7
<b>QCBatchID MERC_04320_L</b>									
Blank	Mercury	ND mg/L							
LCS	Mercury	0.0050 mg/L		0.005 mg/L	100%	85-115%			
LCSD	Mercury	0.0051 mg/L		0.005 mg/L	103%	85-115%	2.9%	0-25%	
MS	Mercury	0.0046 mg/L	ND	0.005 mg/L	91%	80-120%			
MSD	Mercury	0.0045 mg/L	ND	0.005 mg/L	91%	80-120%	1.3%	0-25%	
<b>QCBatchID META_14736_L</b>									
Blank	TCLP Antimony	ND mg/L							
	TCLP Arsenic	ND mg/L							
	TCLP Barium	ND mg/L							
	TCLP Beryllium	ND mg/L							
	TCLP Cadmium	ND mg/L							
	TCLP Chromium	ND mg/L							
	TCLP Lead	ND mg/L							
	TCLP Nickel	ND mg/L							
	TCLP Selenium	ND mg/L							
	TCLP Silver	ND mg/L							
	TCLP Tin	ND mg/L							
	TCLP Zinc	ND mg/L							
LCS	TCLP Antimony	0.105 mg/L		0.1 mg/L	105%	85-115%			
	TCLP Arsenic	0.104 mg/L		0.1 mg/L	104%	85-115%			
	TCLP Barium	0.103 mg/L		0.1 mg/L	103%	85-115%			
	TCLP Beryllium	0.105 mg/L		0.1 mg/L	105%	85-115%			
	TCLP Cadmium	0.108 mg/L		0.1 mg/L	108%	85-115%			
	TCLP Chromium	0.103 mg/L		0.1 mg/L	104%	85-115%			
	TCLP Lead	0.106 mg/L		0.1 mg/L	106%	85-115%			
	TCLP Nickel	0.107 mg/L		0.1 mg/L	107%	85-115%			
	TCLP Selenium	0.103 mg/L		0.1 mg/L	104%	85-115%			
	TCLP Silver	0.108 mg/L		0.1 mg/L	108%	85-115%			
	TCLP Tin	1.02 mg/L		1 mg/L	102%	85-115%			
	TCLP Zinc	0.109 mg/L		0.1 mg/L	109%	85-115%			
LCSD	TCLP Antimony	0.104 mg/L		0.1 mg/L	104%	85-115%	0.7%	0-20%	
	TCLP Arsenic	0.105 mg/L		0.1 mg/L	105%	85-115%	0.5%	0-20%	
	TCLP Barium	0.103 mg/L		0.1 mg/L	103%	85-115%	0.0%	0-20%	
	TCLP Beryllium	0.105 mg/L		0.1 mg/L	105%	85-115%	0.5%	0-20%	
	TCLP Cadmium	0.106 mg/L		0.1 mg/L	106%	85-115%	1.9%	0-20%	
	TCLP Chromium	0.103 mg/L		0.1 mg/L	103%	85-115%	0.0%	0-20%	

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## QC Summary

Project Name: **Slag Treatment Sump Water**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
<b>QCBatchID META_14736_L</b>									
MS	TCLP Lead	0.108 mg/L		0.1 mg/L	108%	85-115%	1.4%	0-20%	
	TCLP Nickel	0.105 mg/L		0.1 mg/L	105%	85-115%	1.9%	0-20%	
	TCLP Selenium	0.105 mg/L		0.1 mg/L	105%	85-115%	1.6%	0-20%	
	TCLP Silver	0.107 mg/L		0.1 mg/L	107%	85-115%	1.2%	0-20%	
	TCLP Tin	1.03 mg/L		1 mg/L	103%	85-115%	1.0%	0-20%	
	TCLP Zinc	0.110 mg/L		0.1 mg/L	110%	85-115%	0.6%	0-20%	
	TCLP Antimony	0.488 mg/L	ND	0.5 mg/L	98%	80-120%			
	TCLP Arsenic	0.513 mg/L	ND	0.5 mg/L	103%	80-120%			
	TCLP Barium	1.13 mg/L	0.703 mg/L	0.5 mg/L	85%	80-120%			
	TCLP Beryllium	0.525 mg/L	ND	0.5 mg/L	105%	80-120%			
	TCLP Cadmium	0.500 mg/L	ND	0.5 mg/L	100%	80-120%			
	TCLP Chromium	0.525 mg/L	ND	0.5 mg/L	105%	80-120%			
	TCLP Lead	0.520 mg/L	ND	0.5 mg/L	104%	80-120%			
	TCLP Nickel	0.547 mg/L	0.026 mg/L	0.5 mg/L	104%	80-120%			
	TCLP Selenium	0.513 mg/L	ND	0.5 mg/L	103%	80-120%			
	TCLP Silver	0.515 mg/L	ND	0.5 mg/L	103%	80-120%			
	TCLP Tin	4.99 mg/L	0.004 mg/L	5 mg/L	100%	80-120%			
	TCLP Zinc	0.555 mg/L	0.024 mg/L	0.5 mg/L	106%	80-120%			
MSD	TCLP Antimony	0.527 mg/L	ND	0.5 mg/L	106%	80-120%	7.8%	0-20%	
	TCLP Arsenic	0.548 mg/L	ND	0.5 mg/L	110%	80-120%	6.6%	0-20%	
	TCLP Barium	1.19 mg/L	0.703 mg/L	0.5 mg/L	97%	80-120%	5.2%	0-20%	
	TCLP Beryllium	0.528 mg/L	ND	0.5 mg/L	106%	80-120%	0.7%	0-20%	
	TCLP Cadmium	0.533 mg/L	ND	0.5 mg/L	107%	80-120%	6.5%	0-20%	
	TCLP Chromium	0.546 mg/L	ND	0.5 mg/L	109%	80-120%	3.9%	0-20%	
	TCLP Lead	0.529 mg/L	ND	0.5 mg/L	106%	80-120%	1.7%	0-20%	
	TCLP Nickel	0.573 mg/L	0.026 mg/L	0.5 mg/L	109%	80-120%	4.6%	0-20%	
	TCLP Selenium	0.565 mg/L	ND	0.5 mg/L	113%	80-120%	9.6%	0-20%	
	TCLP Silver	0.541 mg/L	ND	0.5 mg/L	108%	80-120%	4.9%	0-20%	
	TCLP Tin	5.30 mg/L	0.004 mg/L	5 mg/L	106%	80-120%	6.0%	0-20%	
	TCLP Zinc	0.568 mg/L	0.024 mg/L	0.5 mg/L	109%	80-120%	2.2%	0-20%	
<b>QCBatchID META_14936_L</b>									
Blank	Antimony	ND mg/L							
	Arsenic	ND mg/L							
	Barium	ND mg/L							
	Beryllium	ND mg/L							
	Cadmium	ND mg/L							
	Chromium	ND mg/L							
	Lead	ND mg/L							
	Nickel	ND mg/L							
	Selenium	ND mg/L							
	Silver	ND mg/L							
	Tin	ND mg/L							
	Zinc	ND mg/L							

Exide Technologies  
Environmental Manager

## QC Summary

Project Name: **Slag Treatment Sump Water**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
<b>QCBatchID META_14936_L</b>									
LCS	Antimony	0.104 mg/L		0.1 mg/L	104%	85-115%			
	Arsenic	0.104 mg/L		0.1 mg/L	104%	85-115%			
	Barium	0.104 mg/L		0.1 mg/L	104%	85-115%			
	Beryllium	0.110 mg/L		0.1 mg/L	110%	85-115%			
	Cadmium	0.106 mg/L		0.1 mg/L	106%	85-115%			
	Chromium	0.101 mg/L		0.1 mg/L	101%	85-115%			
	Lead	0.109 mg/L		0.1 mg/L	109%	85-115%			
	Nickel	0.105 mg/L		0.1 mg/L	105%	85-115%			
	Selenium	0.105 mg/L		0.1 mg/L	105%	85-115%			
	Silver	0.106 mg/L		0.1 mg/L	106%	85-115%			
	Tin	1.02 mg/L		1 mg/L	102%	85-115%			
	Zinc	0.108 mg/L		0.1 mg/L	108%	85-115%			
LCSD	Antimony	0.103 mg/L		0.1 mg/L	103%	85-115%	1.1%	0-20%	
	Arsenic	0.104 mg/L		0.1 mg/L	104%	85-115%	0.1%	0-20%	
	Barium	0.103 mg/L		0.1 mg/L	104%	85-115%	0.5%	0-20%	
	Beryllium	0.109 mg/L		0.1 mg/L	109%	85-115%	0.7%	0-20%	
	Cadmium	0.105 mg/L		0.1 mg/L	105%	85-115%	0.9%	0-20%	
	Chromium	0.101 mg/L		0.1 mg/L	101%	85-115%	0.2%	0-20%	
	Lead	0.112 mg/L		0.1 mg/L	112%	85-115%	2.9%	0-20%	
	Nickel	0.105 mg/L		0.1 mg/L	105%	85-115%	0.4%	0-20%	
	Selenium	0.105 mg/L		0.1 mg/L	105%	85-115%	0.3%	0-20%	
	Silver	0.106 mg/L		0.1 mg/L	106%	85-115%	0.1%	0-20%	
	Tin	1.03 mg/L		1 mg/L	103%	85-115%	1.3%	0-20%	
	Zinc	0.108 mg/L		0.1 mg/L	108%	85-115%	0.2%	0-20%	
MS	Antimony	0.532 mg/L	ND	0.5 mg/L	106%	80-120%			
	Arsenic	0.524 mg/L	ND	0.5 mg/L	105%	80-120%			
	Barium	0.578 mg/L	0.051 mg/L	0.5 mg/L	105%	80-120%			
	Beryllium	0.569 mg/L	ND	0.5 mg/L	114%	80-120%			
	Cadmium	0.528 mg/L	ND	0.5 mg/L	106%	80-120%			
	Chromium	0.503 mg/L	ND	0.5 mg/L	101%	80-120%			
	Lead	0.560 mg/L	ND	0.5 mg/L	112%	80-120%			
	Nickel	0.511 mg/L	ND	0.5 mg/L	102%	80-120%			
	Selenium	0.513 mg/L	ND	0.5 mg/L	103%	80-120%			
	Silver	0.527 mg/L	ND	0.5 mg/L	105%	80-120%			
	Tin	5.34 mg/L	ND	5 mg/L	107%	80-120%			
	Zinc	0.565 mg/L	0.042 mg/L	0.5 mg/L	105%	80-120%			
MSD	Antimony	0.530 mg/L	ND	0.5 mg/L	106%	80-120%	0.3%	0-20%	
	Arsenic	0.523 mg/L	ND	0.5 mg/L	105%	80-120%	0.2%	0-20%	
	Barium	0.582 mg/L	0.051 mg/L	0.5 mg/L	106%	80-120%	0.6%	0-20%	
	Beryllium	0.578 mg/L	ND	0.5 mg/L	116%	80-120%	1.6%	0-20%	
	Cadmium	0.526 mg/L	ND	0.5 mg/L	105%	80-120%	0.4%	0-20%	
	Chromium	0.495 mg/L	ND	0.5 mg/L	99%	80-120%	1.6%	0-20%	
	Lead	0.544 mg/L	ND	0.5 mg/L	109%	80-120%	2.9%	0-20%	



OXIDOR Laboratories, LLC



T104704227-11-5

Order ID: 11070044

Date: 7/11/2011

Revised: 7/18/2011

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Exide Technologies  
Environmental Manager

## QC Summary

Project Name: **Slag Treatment Sump Water**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
QCBatchID META_14936_L									
	Nickel	0.513 mg/L	ND	0.5 mg/L	103%	80-120%	0.4%	0-20%	
	Selenium	0.510 mg/L	ND	0.5 mg/L	102%	80-120%	0.6%	0-20%	
	Silver	0.531 mg/L	ND	0.5 mg/L	106%	80-120%	0.8%	0-20%	
	Tin	5.35 mg/L	ND	5 mg/L	107%	80-120%	0.2%	0-20%	
	Zinc	0.554 mg/L	ND	0.5 mg/L	111%	80-120%	2.0%	0-20%	



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## Case Narrative

Project Name: **Slag Treatment Sump Water**

---

D-1	Elevated reporting limit(s) due to dilution. Dilution resulted from sample matrix interference, high target analyte(s), high non-target analyte(s) or a combination thereof.
Q-7	Recovery and/or RPD outside desirable limits.
ppm	Parts per million = mg/Kg or mg/L
ppb	Parts per billion = ug/Kg or ug/L
MQL	Method quantitation limit
SDL	Sample detection limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilutions)
SQL	Sample quantitation limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilution)
ND	Analyte not detected at or above SQL
LCS/LCSD	Laboratory control spike / Laboratory control spike duplicate
MS/MSD	Matrix spike / Matrix spike duplicate
RPD	Relative percent difference
Sub	Analysis performed by subcontract laboratory
*	Refer to QC section

*Solid sample results reported on a dry weight basis for all applicable analysis, unless otherwise noted. Dry weight calculations based upon % solids obtained as outlined in EPA method 5035 section 7.5*

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Oxidor Laboratories, LLC certifies to the best of its knowledge that all results contained in this report are consistent with the National Environmental Laboratory Accreditation Program, except where otherwise noted.

Exide Technologies  
Environmental Manager

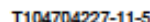
## Sample Preservation Verification

Project Name: **Slag Treatment Sump Water**

Receipt temp: <b>2.9 °C on Ice</b>			All applicable VOA's received free of headspace: <b>N/A</b>		
Receipt method: <b>Courier</b>					
Custody seal intact: <b>Not Present</b>			All samples / labels received intact: <b>Yes</b>		
Customer Sample ID: <b>STS-063011</b>			Collected By: <b>Edward Hardy</b>		
Oxidor Sample ID: <b>11070044-001</b>			Collector Affiliation:		
Collected: <b>06/30/11</b>			Matrix: <b>Liquid</b>		
<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated Preservation</u>	<u>pH</u>
Customer Container	2	Grab		Temp	-

Sample conditions at time of receipt at laboratory verified in part or in whole by:

L.J.



Page 10 of 12

**PROJECT DESCRIPTION: Slag Treatment Sump Water**

**EXIDE**  
BATTERY  
CORPORATION  
1000 N. 17th St.  
P.O. Box 1000  
Pittsfield, MA 01202  
Tel: 413/239-1111  
Fax: 413/239-1112

# CHAIRMAN'S MESSAGE

[illegible]

## Chain of Custody

PROJECT DESCRIPTION: **Slag Treatment Sump Water**

**EXIDE**

1118 E. 20th St.  
Plano, TX 75074  
Tel: 469.200.9921  
Fax: 469.200.9922

### CHAIN OF CUSTODY RECORD

PROJECT: 1118 E. 20th St.	ANALYST: JN	DATE: 7/11/2011
ADDRESS: 1118 E. 20th St.	LABORATORY: EXIDE	DATE: 7/11/2011
PROJECT: 1118 E. 20th St.	LABORATORY: EXIDE	DATE: 7/11/2011

DATE	TIME	ANALYST	TEST	RESULT	UNIT	REMARKS
7/11/2011	09:00	JN	ACID-BASE NEUTRALIZING CAPACITY (AN) (mg/L)	100	mg/L	100

NOTE: INFORMATION: SLAG TREATMENT SUMP WATER ANALYSIS RESULTS WILL BE REPORTED TO THE CLIENT BY 7/11/2011.

LABORATORY: EXIDE

PQ-4: 2/19/2011

DATE	TIME	ANALYST	TEST	RESULT	UNIT	REMARKS
7/11/2011	09:00	JN	ACID-BASE NEUTRALIZING CAPACITY (AN) (mg/L)	100	mg/L	100

NOTE: INFORMATION: SLAG TREATMENT SUMP WATER ANALYSIS RESULTS WILL BE REPORTED TO THE CLIENT BY 7/11/2011.



OXIDOR Laboratories, LLC



T104704227-11-5

Order ID: 11070044

Date: 7/11/2011

Revised: 7/18/2011

Page 12 of 12

## Chain of Custody

PROJECT DESCRIPTION: **Slag Treatment Sump Water**

Page 1 of 1

Homer Youngblood

From: George Ordonez  
Sent: Wednesday, July 13, 2011 1:00 PM  
To: Homer Youngblood  
Subject: Rename project report  
-format-

As per our phone conversation, please rename the project name on the analytical with Color sample #11070044-001  
Rename from Slag Treatment Sludge to Slag Treatment Sump Water. I'm also attaching the corrected CoC.

Thank you

George Ordonez  
Prisco QC Lab / Environmental  
Phone: 972/335/4444 ex 24  
Fax: 972/337/4707

Email: [GEOGE.ORDONLZ@OXIDOR.COM](mailto:GEOGE.ORDONLZ@OXIDOR.COM)



This message (including any attachments) may contain protected information and is intended only for the individual(s) named. If you are not a named individual, you should not disseminate, distribute or copy this e-mail. If you have received this email in error, please notify the system manager and delete this e-mail.

7/18/2011

### **Attachment 3**

**RCRA FACILITY INVESTIGATION  
FOR  
GNB INCORPORATED  
Frisco, Texas  
VOLUME I/II**

May 8, 1991

Prepared By

LAKE ENGINEERING, INC.  
6000 Lake Forrest Drive  
Suite 350  
Atlanta, Georgia 30328

495.4.5

## 12.0 LANDFILL DELINEATIONS

Aerial photographs and interviews with current employees served as a reference in estimating the boundaries of the north and south landfills. The exact boundary locations were determined using a drill rig mounted solid-stem auger. Auger holes were made around the estimated boundary to ascertain the exact location of the edge of the fill. Holes were placed at the estimated edge. If landfill material was encountered additional holes were augured one to three feet apart away from the center of the landfill until clean material was encountered. If the initial hole was clean, additional holes were augured one to three feet apart toward the center of the landfill until landfill material was encountered. The traverses of holes were spaced from 25 to 100 feet apart based on the estimated configuration of each landfill. A visual inspection of the material encountered and the resistance to penetration were used to determine whether or not the landfill boundary had been encountered. All boreholes were grouted to the surface following the delineation.

The depths of the landfill disposal areas were determined by trenching in the center of the North and South areas. The trenching was conducted using a backhoe. Two trenches were excavated in the North area and one trench in the South area. Following the determination of depth, the trenches were backfilled and compacted. The depth of the active slag fill was determined from pre-existing ground level contours versus current elevations.

During the determination of the boundaries of the landfills, an inspection was made to ascertain the construction of the covers on the landfills and their condition. This determination was conducted using visual inspection of the auger holes and trenches.

### 12.1 North Landfill

During the north landfill delineation, 64 auger holes were drilled using a mobile drilling rig. Based on the 64 holes drilled, 47 delineation points were located to describe the extent of the landfill. To determine the condition of the landfill cap and determine the depth of the landfilled material, two test pits were dug. The results of the delineation and test pits are described below.

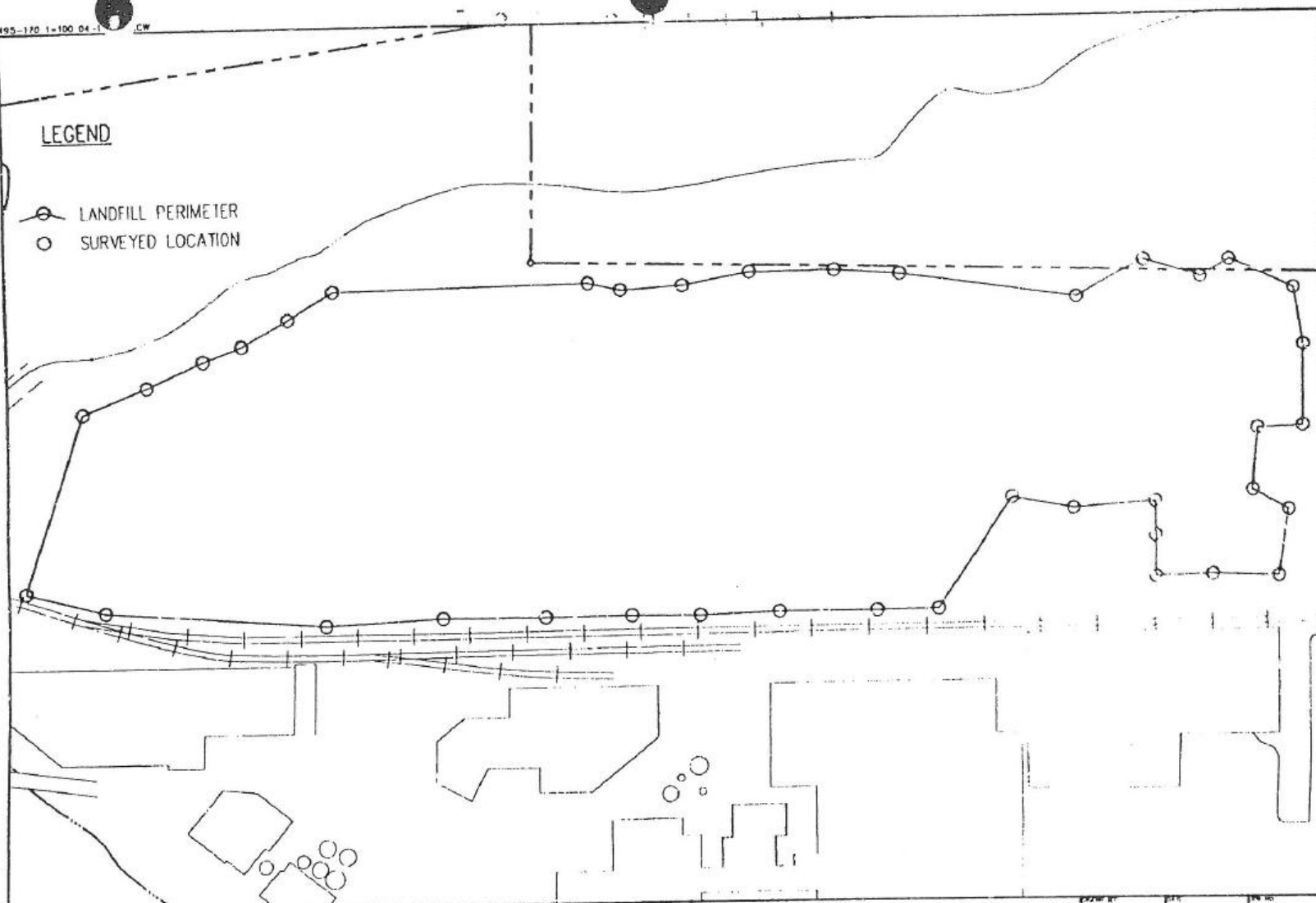
#### 12.1.1 Delineation

The location of horizontal extent of the north landfill is shown in Figure 12-1. The landfill encompasses approximately 5.2 acres.

495-170 1-100 04-1

# LEGEND

- LANDFILL PERIMETER
- SURVEYED LOCATION



LAKE ENGINEERING, INCORPORATED  
8000 LAKE FOREST DR. SUITE 350  
ATLANTA, GEORGIA 30328  
(404) 257-9834

GNB Incorporated  
FRISCO, TEXAS

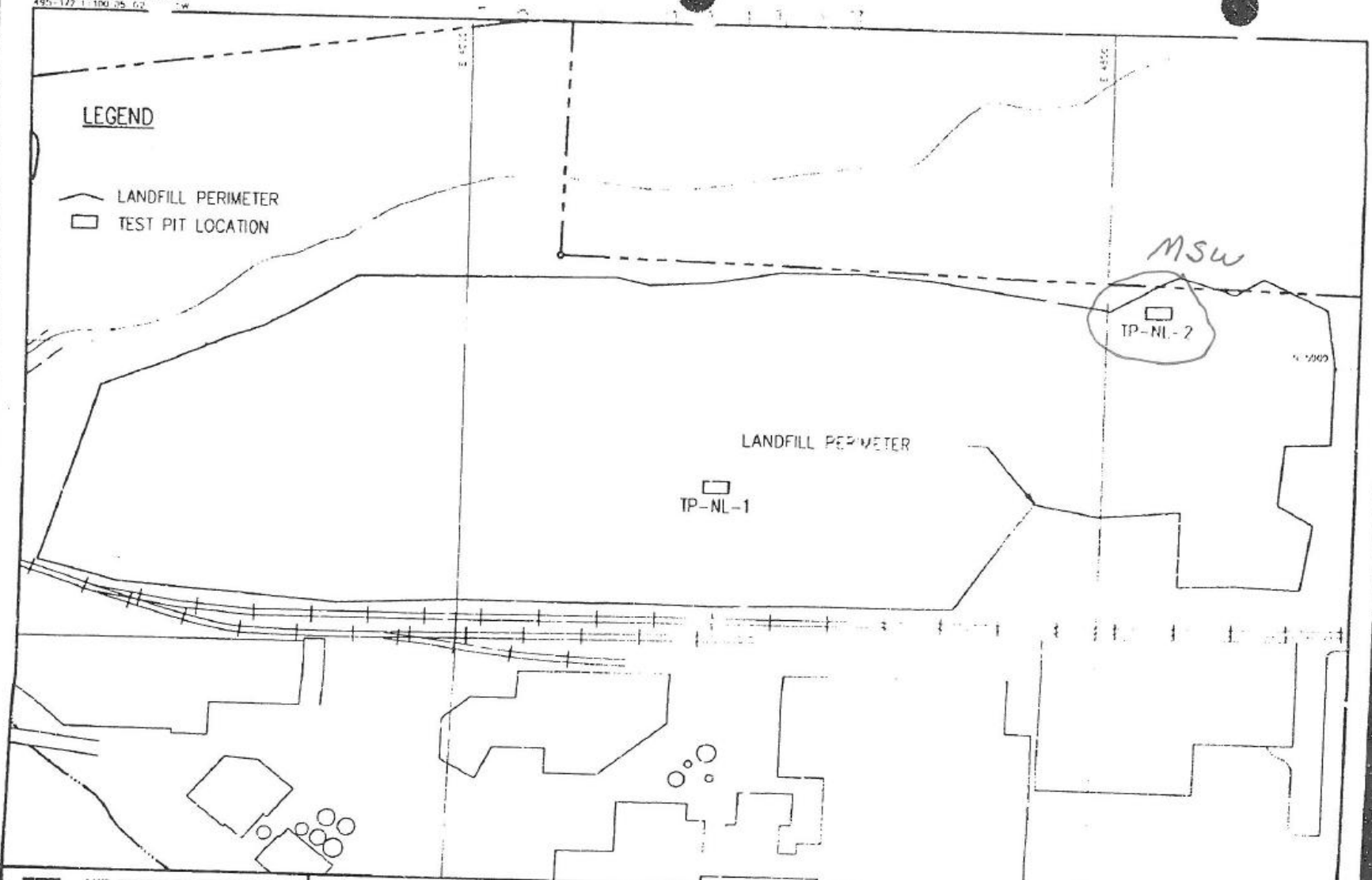
NORTH LANDFILL  
AREA DELINEATION

DATE	04-09-91	495.4.5
BY	J.A.P.	1" = 100'
SCALE	495-170	12-1

495-172 1 100 05 02

# LEGEND

- LANDFILL PERIMETER
- TEST PIT LOCATION



LAKE ENGINEERING, INCORPORATED  
8000 LAKE FORTNET DR. SUITE 350  
ATLANTA, GEORGIA 30328  
(404) 257-9834

GNB Incorporated  
FRISCO, TEXAS

NORTH LANDFILL  
TEST PIT EXCAVATION

DESIGNED BY	R.C.W.	DATE	04-09-91	SCALE	495.4.5
DRAWN BY	J.A.P.	SCALE	1" = 100'	FIG. NO.	12-2
PROJECT NO.					
495-172					

During the course of the delineation several pockets of slag, construction debris, and normal household and industrial trash was encountered. The pockets of slag were located on the western and southern side of the landfill adjacent to the railroad spur. Construction debris, household, and industrial trash were observed on the northern and eastern portion of the landfill.

The landfilled materials were covered with one to three feet of compacted clay. The cap was vegetated with no signs of cap gullying. However, thinning of the cap was visible in some areas.

#### **12.1.2 Test Pit**

The location of the two test pits excavated during this phase of the investigation are shown in Figure 12-2. One test pit was dug into the old solid waste landfill (TP-NL-1) and one in the old trash landfill (TP-NL-2). The cap cover at TP-NL-1 was approximately two feet of compacted soil. The contents of the pit included blast furnace slag and construction debris. The depth of the landfill was 20 feet. The cap cover of TP-NL-2 was approximately one foot thick, composed of compacted clay. The contents of this test pit included household garbage. There was no indication that facility process solid waste was disposed of at this location. The contents of the borings and test pits coincide with information gathered from conversations with plant employees. The depth of this section of the landfill was approximately 10 feet.

### **12.2 South Landfill**

During the south landfill delineation, 30 auger holes were drilled using a mobile drilling rig. From the 30 holes drilled, 22 delineation points were located to describe the extent of the landfill. To determine the condition of the landfill cap and determine the depth of the landfilled material, a test pit was excavated using a backhoe. The results of this phase of the investigation are described below.

#### **12.2.1 Delineation**

The location of horizontal extent of the south landfill is shown in Figure 12-3. The landfill encompasses approximately 0.9 acres.

During delineation, blast furnace slag and hard rubber chips were encountered. The slag was typically encountered one-half to two feet below the surface. The landfill cap was constructed with compacted clay. Vegetation covered the cap and there was no sign of erosion.